

STYRON A-TECH™ 1180

Polystyrene Resin

Overview

STYRON A-TECH™ 1180 advanced technology polystyrene resin is a high-impact resin with a unique combination of high gloss, high heat, excellent stiffness and good practical toughness. It is designed for injection molding applications.

Main Characteristics:

- High gloss
- High heat
- High stiffness
- Good practical toughness

Applications:

- Air-conditioner
- Refrigerator accessories

Complies with:

- U.S. FDA 21 CFR 177.1640
- Consult the regulation for complete details.

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.04 g/cm ³	1.04 g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	3.0 g/10 min	3.0 g/10 min	ASTM D1238
Molding Shrinkage - Flow	4.0E-3 to 7.0E-3 in/in	0.40 to 0.70 %	
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Strength			ASTM D638
Yield, Compression Molded	4100 psi	28.3 MPa	
Yield, Injection Molded	4900 psi	33.8 MPa	
Ultimate, Compression Molded	3100 psi	21.4 MPa	
Ultimate, Injection Molded	4500 psi	31.0 MPa	
Tensile Elongation			ASTM D638
Break, Compression Molded	30 %	30 %	
Break, Injection Molded	55 %	55 %	
Flexural Modulus			ASTM D790
Compression Molded	261000 psi	1800 MPa	
Injection Molded	300000 psi	2070 MPa	
Flexural Strength			ASTM D790
Compression Molded	7300 psi	50.3 MPa	
Injection Molded	8700 psi	60.0 MPa	
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact			ASTM D256
73°F (23°C), Compression Molded	1.5 ft-lb/in	80 J/m	
73°F (23°C), Injection Molded	2.0 ft-lb/in	110 J/m	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			ASTM D648
264 psi (1.8 MPa), Unannealed	167 °F	75.0 °C	
264 psi (1.8 MPa), Annealed	210 °F	98.9 °C	
Vicat Softening Temperature	223 °F	106 °C	ASTM D1525
CLTE - Flow	4.2E-5 in/in/°F	7.6E-5 cm/cm/°C	ASTM D696

Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating ¹ (0.06 in (1.5 mm))	HB	HB	UL 94
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Gardner Gloss (60°)	95	95	ASTM D523

Notes

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

¹ This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.



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North America	
U.S.	+1-855-TRINSEO (+1-855-874-6736)
U.S. - Canada	+1-989-633-1718
Latin America	
Brazil	+55-11-5184-8722
Argentina, Chile, South Region of LAA	+54-11-4319-0100
Mexico, Colombia, North Region of LAA	+52-55-5201-4700
Europe/Middle East/Africa	
	+800-444-11-444
	+31-11567-2601
Asia Pacific	
China	+603-7965-53-19
	+86-21-3851-1017
Email	CIG@trinseo.com

www.trinseo.com

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